

**Montana Board of Oil and Gas Conservation
Environmental Assessment**

Operator: Continental Resources, Inc.
Well Name/Number: Kane 1-10H
Location: NE NW Section 15 T26N R54E
County: Richland, **MT;** **Field (or Wildcat)** W/C Bakken Horizontal

Air Quality

(possible concerns)

Long drilling time: No, 30 to 40 days drilling time.

Unusually deep drilling (high horsepower rig): No, triple derrick drilling rig, 900-1000 HP to drill a single lateral Bakken Formation well to 19,998'MD/9,444' TVD.

Possible H2S gas production: Slight chance of H2S gas production.

In/near Class I air quality area: No Class I air quality area.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: No special concerns – using triple rig to drill a single lateral Bakken Formation well to 19,998'MD/9,444' TVD.

Water Quality

(possible concerns)

Salt/oil based mud: Yes, oil based invert drilling mud system will be used on the intermediate string hole and saltwater for the horizontal lateral hole. Freshwater and freshwater mud system will be used on the surface hole.

High water table: No high water table anticipated.

Surface drainage leads to live water: No, closest drainage is East Charley Creek , about 1/16 of a mile to the southwest from this location.

Water well contamination: No, closest water wells are 1 mile and further in any direction from this location. Surface hole will be drilled with freshwater and freshwater drilling fluids to 1200'. Surface casing will be set and cemented from 1200' to surface.

Porous/permeable soils: No, sandy clay soils.

Class I stream drainage: No Class I stream drainages in the area of review.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☐ Closed mud system

☐ Off-site disposal of solids/liquids (in approved facility)

☐ Other: _____

Comments: 1200' of surface casing cemented to surface adequate to protect freshwater zones and to cover the Fox Hills Formation.

Soils/Vegetation/Land Use

(possible concerns)

Steam crossings: None anticipated, will utilize existing county road, #146.

High erosion potential: No, small cut, up to 3.3' and small fill, up to 3.8' required.

Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, a large, 500'X270' location size required.

Damage to improvements: Slight, surface use is grassland, adjacent to East Charley Creek.

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☐ Other _____

Comments: Will use existing county road, #146. A short access of about 144' will be built into this location off the existing county road. Oil based invert drilling fluids will be recycled. Cuttings and mud solids will be buried in the lined pit after being allowed to dry. Completion fluids will be trucked to a Class II disposal. No special concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences are about 5/8 of a mile to the east and 1 mile to the northwest from this location.

Possibility of H2S: Slight chance H2S.

Size of rig/length of drilling time: Triple drilling rig/short 30 to 40 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Adequate surface casing and operational BOP should mitigate all problems. No concerns.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Species identified as threatened by the USFWS are Pallid Sturgeon, Interior Lease Tern, Piping Plover and Whooping Crane. Species listed as candidate species are the Greater Sage Grouse and Sprague's Pipit. NH tracker website for this Township and Range lists only species of concern as the Eastern Red Bat.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: _____

Comments: Private surface grasslands. There maybe species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites None identified

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: _____

Comments: On private surface grasslands. There maybe possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: No concerns.

Remarks or Special Concerns for this site

Well is a single lateral Bakken Formation 19,998'MD/9,444' TVD.

Summary: Evaluation of Impacts and Cumulative effects

No long term impact expected, some short term impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki

(title:) Chief Field Inspector

Date: December 7, 2011

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website

(Name and Agency)

Richland County water wells

(subject discussed)

December 7, 2011

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA
COUNTIES, Richland County

(subject discussed)

December 7, 2011

(date)

Montana Natural Heritage Program Website (FWP)

(Name and Agency)

Heritage State Rank= S1, S2, S3, T26N R54E

(subject discussed)

December 7, 2011

(date)

If location was inspected before permit approval:

Inspection date: ____

Inspector: _ _____

Others present during inspection: ____ _____